Claims

1. A method for connecting one of several customer premises equipment, or CPE, via an ATM network to one of several service providers, or SPs, said method comprising:

5　connecting each CPE to the ATM network via a corresponding network termination point, or NT; and

forming an access server function, or ASF, having a permanent virtual connection to each NT and a connection to each SP;

c h a r a c t e r i z e d　in that

10　a tunnelling protocol is established on said permanent virtual connection between each NT and said ASF, said tunnelling protocol being able to support an integrated signalling protocol;

the CPE or its user selects an appropriate SP by using said integrated signalling protocol;

15　routing from said CPE to said selected SP is performed by said ASF; and

said ASF connects the CPE to the selected SP using said integrated signalling protocol.

2. A method according to claim 1, c h a r a c t e r i z e d　by providing
20　one permanent virtual connection from the ASF to each SP.

3. A method according to claim 1, c h a r a c t e r i z e d　by providing a pool of permanent virtual connections from the ASF to each SP; and allocating one connection to each NT from said pool.

4. A method according to claim 1, c h a r a c t e r i z e d　by establishing
25　lishing one switched virtual connection (SVC) from the ASF to each SP, on the basis of signalling which the ASF receives from said CPE via said tunnelling protocol.

5. A method according to claim 1, c h a r a c t e r i z e d　by establishing said tunnelling protocol only in response to detecting appropriate activity
30　ity in said CPE.

6. A method according to claim 1, c h a r a c t e r i z e d　by establishing said tunnelling protocol permanently and initiating said integrated sig-

nalling and authenticating the user of said CPE only in response to detecting appropriate activity in said CPE.

7. A method according to claim 1, c h a r a c t e r i z e d by authenticating the user of said CPE both by said ASF and by the selected SP.

5   8. A network element (ASF) providing an access server function for connecting each of several customer premises equipment, or CPE, via an ATM network to one of several service providers, or SPs, said network element comprising:

interface means to several network termination points, or NTs for
10   connecting each CPE to the ATM network via a corresponding NT; and

interface means to each SP for providing a permanent virtual connection or a switched virtual connection thereto;
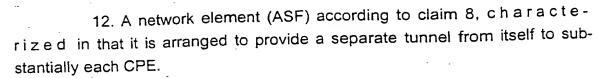
c h a r a c t e r i z e d in that the network element is arranged to:

use a tunnelling protocol on said permanent virtual connection be-
15   tween itself and each NT, said tunnelling protocol being able to support an integrated signalling protocol;

select an appropriate SP in response to signalling from each CPE or its user, said selecting being carried out using said integrated signalling protocol;
20   support routing from each CPE to said selected SP; and

connect each CPE to the selected SP using said integrated signalling protocol.

9. A network element (ASF) according to claim 8, c h a r a c t e r i - z e d in that it is arranged to provide one permanent virtual connection from
25   itself to substantially each SP.

10. A network element (ASF) according to claim 8, c h a r a c t e - r i z e d in that it is arranged to provide a pool of permanent virtual connections from itself to each SP and to allocate one connection to each active NT from said pool.

30   11. A network element (ASF) according to claim 8, c h a r a c t e - r i z e d in that it is arranged to provide a switched virtual connection from itself to at least one SP.

12. A network element (ASF) according to claim 8, c h a r a c t e - r i z e d in that it is arranged to provide a separate tunnel from itself to substantially each CPE.

13. A network element (ASF) according to claim 8, c h a r a c t e - 5   r i z e d in that it is arranged to cooperate with an NT between itself and each CPE,

said NT being arranged to provide a separate tunnel from itself to substantially each CPE and to combine the separate tunnel into fewer tunnels, preferably a single tunnel, from itself to the ASF.